A

LECTURE ON RAIL ROADS,

DELIVERED JANUARY 12, 1829,

BEFORE THE

MASSACHUSETTS

CHARITABLE MECHANIC ASSOCIATION.

BY WILLIAM JACKSON,

A MEMBER OF THE ASSOCIATION.

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Boston, Feb. 3, 1829.

MR. WILLIAM JACKSON,

SIR,—The undersigned, a committee, appointed by your friends and associates, the members of the Massachusetts Charitable Mechanic Association, to carry into effect the wishes of the Association in regard to a course of Scientific Lectures, respectfully request of you, for the purpose of publication, a copy of your Lecture on Rail Roads, delivered on the 12th of January, and repeated on the 26th of the same month.

With great regard, your friends and associates,

SAMUEL T. ARMSTRONG,
JOSEPH T. BUCKINGHAM,
CHARLES WELLS, } *Committee.*
FRANCIS JACKSON,
GERRY FAIRBANKS,

Newton, Feb. 4, 1829.

GENTLEMEN,—Agreeably to your request, I send the copy of the Lecture on Rail Roads, which I had the honor to give before the Mechanic Association, wishing only to say, by way of preface, that my sole object in the Lecture was to make myself and associates better acquainted with the subject, without the most distant idea that it would ever be subjected to any other scrutiny. The facts and matter have been gathered from all the various documents and sources within my reach, and very carelessly thrown together, so that I am not now able to say to whom I am indebted for them, or even to mark as quotations all that ought to be so marked, or make any other than a general acknowledgement of assistance, derived from Grey's, Wood's, and Tredgold's Treatises on Rail Roads—various Reports of Commissioners and Directors—Encyclopedias, Pamphlets, Newspapers, &c.

Your assured friend, &c. WILLIAM JACKSON.

LECTURE.

Our object this evening, my respected associates and friends, is to spend an hour, first, in glancing at the progress of the science of road-making in other ages and countries, as well as our own; after which, a few remarks will be made on canals, particularly as to their relative value with Rail Roads; but lastly, and principally, on the construction and uses of Rail Roads; together with the importance and necessity of introducing them here.

In a pecuniary point of view, there has never, in any civilized country, been any project presented, more intrinsically valuable, than that of shortening and perfecting interior communications. Nor is there any thing, that more accurately indicates the progress of arts, sciences and general knowledge, and, consequently the prosperity and happiness of nations, than this.

The savage is satisfied with a path only wide enough for himself to move in. The first settlers of new countries must content themselves with an accommodation of this kind, but a little better; and, although lords and owners of vast tracts of land, are miserably poor and ignorant, and must remain but a single remove from the untutored savage, in their political, moral and social relations, until a communication is opened with some more enlightened and intelligent portion of mankind.

Until a road is opened to some manufacturing or commercial city, the privilege of an interior residence is but little better than that of suffering all the privations and hardships of a camp.

The value attached to land, and the best of land too, is merely nominal, and must remain so until the consummation of all things, unless roads can be opened, over which its produce can reach a market.

Hence, we find the most enlightened, intelligent, and enterprising men in all parts of our new settlements turning their eyes, their energies, and their resources, to the all-important subjects of roads, turnpikes, and canals; and, while hundreds and thousands of such men have brought ruin upon themselves and their families, the country has been reaping an almost incalculable advantage from their enterprises.

Look at the famous Cumberland road, which opens a communication between the waters of the Ohio and Atlantic, and which has been such an immense expense to the United States. Such a work could never have been accomplished by individual enterprise; and many have thought ought not to have been by the public. There can be no doubt, however, but that the public at large have reaped a benefit more than equal to the expense.

Look also at the Erie canal, constructed at an expense, which required all the resources of one of the largest and wealthiest States in the Union, together with the united energies and influence of nearly all her wisest and best citizens to accomplish, and what are the results? Although this canal cost more than eight millions of dollars, it already netts 7 or 8 per cent per annum. And this, let it be remembered, is a small, only a very small part of its profits. The increased value of the two strips of land, on each side of the canal, three miles wide, is, in all probability, equal to the whole cost of the canal; while at the same time land on both sides has experienced a greater or less rise, even at the distance of fifty miles. In addition to all this, the advance on real estate in New York city, fairly attributable to the canal, cannot be less than twenty and perhaps thirty millions of dollars. I have seen a calculation, which gave an aggregate amount of pecuniary benefit to New York State, of one hundred millions.

Though not in the same degree, it is precisely in the same way, that improvements in roads affect the value of property in every part of the United States, and in every other civilized country on the face of the globe. Hence, in all ages of the world, it has been found, that, as soon as a nation began to emerge from barbarism, the first traces of civilization have been discovered in the improvement of their roads.

In relation to the science and progress of road-making among the ancients, but little is to be found on record. But in regard to Modern Europe, and even as far back as the time when the Romans gave laws to the world, I find this subject treated upon to a much greater and more minute extent, than I was aware of. And, in fact, I have experienced not a little difficulty in making a selection of such facts as might enable me, in a part of a single lecture, to present, before your minds, an unconfused idea of this widely extended and important subject.

Nothing, in relation to the art of road-making, that I can learn, is now in print, farther back than the days of the Romans. But we are far from being justified in the conclusion that the Greeks, Egyptians, Persians, Assyrians, &c. knew less of this art than ourselves, because nothing of all they knew is now on record. Such splendid works of art as are still found in Greece, Egypt and Persia, are conclusive evidence, that this science was neither unknown nor neglected by these nations.

The materials of which the pyramids, those vast monuments of human power and human folly, were constructed, ancient historians tell us, were brought from the mountains of Arabia, and, of course, might have been transported hundreds of miles, over some part of the distance, on roads as good, and probably a great deal better, than any to be found in our own land;—perhaps Rail Roads. The same idea suggests itself in regard to the ruins of Palmyra, Balbec, and other almost imperishable monuments of human power and skill, scattered over many parts of the eastern hemisphere.

Indeed (notwithstanding the old adage, that every generation grows wiser and wiser, and which every new generation is, with so much self-satisfaction, repeating) we cannot but come to the conclusion, when reflecting upon these vast monuments of ancient art, that both the arts and sciences were carried to a much higher state of perfection by those nations than ourselves, notwithstanding we have now no other evidence of the fact, than their works.

In relation to the art of road-making among the Romans, history is full and sufficiently particular. With them the importance of good roads seems to have been eminently appreciated. In their numerous conquests, which extended to all parts of the then known world, they always made it a prime object to lay open all subdued countries with roads, through which they might obtain supplies or secure a retreat for their invading armies. Such was the Aurelian Road, which led from Rome to Milan, and thence across the Alps, by various routes, forming the key to Gaul (now France) and other northern nations.

In Italy, (formerly Rome,) the Romans are said to have laid no less than 14,000 miles of road, and, according to some writers, not less than 40,000 in their conquered provinces. Some splendid remains of these roads are still to be seen, notwithstanding the lapse of ages, and vicissitudes of time and circumstance, to which they have been subjected.

In the formation of their roads the Romans were remarkable for keeping a straight line of direction; not, as has been in too many instances the fact with our modern road and turnpike constructors, over the tops of hills, but through them, and that too, in many instances, at an almost incredible expense; at one place performing immense excavations, at another stretching over valleys by bridges and aqueducts; and boldly piercing mountains with underground tunnels, as that of Pozzuolo, near Naples, cut about a mile and a half through solid rock, and forming a road-way 15 feet square.

But in nothing is our wonder so much excited, as in the pains bestowed in preparing a firm bottom for these roads. In some instances they built walls of masonry. In others, brick, gravel, and broken stone were laid, to a depth of two or three feet, and upon this large cubes of stone, measuring 18 inches upon their sides, were regularly placed for the wheels to turn upon; and some of them, particularly their military roads, had a double track of these stones, between which a causeway was raised and paved with brick, for the convenience of foot passengers. The celebrated Appian way was of this description. It extended to Capua, and was afterwards continued to Brundusium, about 300 miles, by Julius Cæsar, and formed one of the most splendid memorials of that emperor's reign. This famous road, after the lapse of about 1,900 years, is yet, in many places, in a very perfect state of preservation. Some remains of Roman roads are also still to be seen in England.

In all parts of Europe, improvements in road-making have advanced, just in proportion to the advancement of civilization, arts, and commerce.

"Whenever a city has become distinguished for its commerce, or an inland town for its manufacturing establishments, an increase of population, beyond what such city or town could support, has been the necessary consequence. Supplies must be drawn from adjacent or more distant territory, and, of course, the expense of transporting forms a greater or less item, in the support of the whole population of such places. Consequently, the whole population must have a direct interest in the improvement of all roads, over which supplies are to reach them.

"On the other hand, the inhabitants and owners of those territories have an equally direct and still greater interest in the improvement of roads, over which their produce must travel for a market. In such places, if there be any intelligence among the inhabitants, you will most assuredly find good roads."

Says an intelligent writer upon this subject, "Around every market place you may suppose a number of concentric circles drawn, within each of which certain articles become marketable, which were not so before, and thus become the source of prosperity to many individuals. Diminish the expense of carriage but one farthing and you widen that circle; you form as it were a new creation, not only of stone and earth, trees and plants, but, what is more and better, of men and happiness." And of course an increased value is given to the soil.

The famous Abbé Raynal, in relation to this subject, says, "Let us travel over all the countries of the earth, and where we find no facility for trading from city to town, and from a village to a hamlet, we may pronounce the people to be barbarous, and shall only be deceived respecting the degree of barbarism."

In the number and excellency of its roads at this time, perhaps, there is no country in the world, which equals Great Britain. In Italy, France, Sweden, and many parts of Germany, the roads are excellent. But Spain and Portugal are at least a century behind the rest of civilized Europe, in this and most of the other arts and sciences. The benighted and iron-handed despotism of popery and priestcraft have prostrated the mental energies of these two nations in the dust.

It is interesting to observe what the bare approximation to religious liberty in England, and its more perfect enjoyment in the United States, has done to elevate these two countries in a political, moral, and mental point of view; and, at the same time, to compare them with the miserable and debasing effects of Papal and Mohammedan tyranny, as exhibited in the present state of Spain and Turkey.

The wealth, power, and population, once found in these countries, enabled them in turn to become the controlling power in Europe, and one of them that of the destinies of almost every nation in the then known world. Now, these nations are comparatively weak and powerless; and must continue so, until some mighty convulsion shall overthrow and destroy the demoralizing demons of ignorance and superstition.

Till about 20 years since, the plan of repairing roads in country towns in Great Britain, was substantially the same as has been practised in this State, from its first settlement. But now in Scotland, and pretty generally in England, the statute labor is commuted into a payment in money, instead of personal service. The country is divided into districts, of from 100 to 200 miles of road, with but one surveyor in each, who receives an annual salary for his services. This of course has reduced the principles of road-making to a system, the natural tendency of which is improvement, in all its branches. "Its benefits," says an intelligent writer, "are abundantly apparent, wherever this plan has for any length of time been adopted; and, in no respect, more than in that of its economy."

Many of the most important roads in England, as well as other parts of Europe, are paved. The McAdam plan, so called, is, however, now coming into more general use in England. This consists of a well made gravel road, covered, about six or eight inches thick, with broken stone, somewhat similar to Beacon street, in this city, and some roads in the vicinity of Philadelphia.

"With common roads, rivers have in all ages been resorted to for inland communication. When a more perfect system of interior conveyance became desirable, it was natural to have recourse to deepening rivers; and as natural, that the next step should be, cutting canals, which, on the one hand, avoid the roughness of the common road, and, on the other, the adverse currents of rivers."

In regard to the relative value of Rail Roads and Canals, much has been said and written. The former have been in use for centuries, producing incalculable benefits, in most of the places where they have been constructed. "The canal, however, has the disadvantage of a resisting medium to contend with, acting against the draught in the inverse ratio of the velocity of the boat. The speed of canal carriage is also limited by the destruction, which rapid motion occasions to its banks."

In this respect the Rail Road has a great advantage over canals; as it will undoubtedly prove the most rapid mode of conveyance for passengers that has yet been devised. The Rail Road is also built and kept in repair at from one third to one half the expense of the canal. It may be used in winter as well as summer. Whereas, a canal in this part of the country would be frozen four or five months in the year, and at that season, too, when most needed. A canal must be perfectly level, while on a Rail Road, a variation from level not exceeding 25 feet in a mile, is no serious objection; and a rise of 50, 60, 70, or 80 feet to the mile, where the distance is short, may be overcome by the addition of one or more horses. And this, in such a country as ours, is a very important consideration.

Rivers and streams are much more easily passed by Railways than Canals. Railways may be easily passed in all places; Canals only by expensive and troublesome bridges. Railways are likely to be greatly benefitted by the use of the steam engine, which, it is pretty well ascertained, can never be applied to Canals. Indeed the adoption and general use of steam conveyance on Rail Roads will soon be realized in this country, as it has been in complete and successful operation for several years in England.

One more fact, in relation to the relative value of Rail Roads and Canals, seems to sum up and include all the others; and that is, a company of individuals have been incorporated with a capital of $2,260,000 for the erection of a Rail Road from Liverpool to Manchester. This company, after having had to encounter the enormous expense of an under-ground tunnel for about 1⅓ of a mile, partly under the city of Liverpool; after having expended about $60,000 per mile; and notwithstanding this road will have to compete with two canals running to and from the same places; their stock, just at the moment the road is about to be opened, and with all the Rail Road experience which British capitalists now have, is actually worth an advance.

It is somewhat difficult to determine when the Rail Road was first invented or brought into use. In fact, its invention, like most other valuable inventions of the present day, is the result of gradual improvement. The British claim to be its inventors, and point us back nearly 200 years, to the wooden Railways of Northumberland, for its origin.

But they might as well refer us back 2000 years, to nearly the same kind of roads and better constructed by the Romans, some remains of which are still seen in England, of stone instead of wooden tracks.

In the year 1767 tracks wholly of iron were introduced by Mr. Reynolds, of Colebrookdale. The first public Rail Road Company was instituted at Loughboro' in the year 1789, when the iron edge rail was introduced. In 1799 the plate rail was introduced, with props of stone, at the joining of the rails, instead of timber. All these kinds of rails were of *cast iron.* In the year 1811 wrought iron rails were first introduced at Lord Carlisle's coal works in Cumberland.

Since that period the progress of Rail Roads has been so rapid in England, that it would be as difficult to present before you a detailed account of them, as of the New England turnpikes. In 1812 there were between 200 and 300 miles of Rail Roads in Wales only; and they are now employed at all the principal coal and iron mines in Great Britain, many of which, before the invention of Rail Roads, were not worth working, but have now become valuable property; and barren, worthless, uninhabited wastes, have become pleasant, prosperous and extensive villages. It is supposed there are now more than 3000 miles of Rail Roads in England, erecting, or in successful operation. It has been proposed to construct a Rail Road from London to Edinburgh, a distance of about 350 miles, over which it is calculated to transport passengers twelve, and goods eight, miles an hour.

This improvement is just beginning its progress in other parts of Europe. In Germany it has the sanction of the Emperor and his government, and appears to be making rapid progress. In fact, if Europe remains at peace ten years, it is easy to foresee that a total revolution with regard to its internal commerce will be produced by the general introduction of Rail Roads. The Pacha of Egypt had his agents in England four years ago, examining their Rail Roads, with a view of introducing them into the land of the Pharaohs; and, in all probability, had it not been for the Greek war, which has drawn so heavily upon his resources, the free and intelligent citizens of Massachusetts might now have had the benefit of that barbarian's experience to aid them in settling the question as to the expediency of introducing them here.

Though slow, incredibly slow, as this country has been in turning its attention to this important subject, I rejoice in being able to say, that the entering wedge has been driven; and that the inquiry, What is Truth, in relation to a matter of such vital importance, is beginning to be seriously and earnestly made. The inhabitants of many parts of the United States are already reaping important benefits from the introduction of this improvement. Vast quantities of coal are now consumed in almost every part of our sea board, the price of which is several dollars less per ton than it would have been but for the facilities which a Rail Road has afforded for its transportation. The construction, uses and advantages of the Quincy Rail Road, I presume,are familiar to most of those who hear me. The cars upon this road carry from four to five tons. Two cars are considered as a load for one horse, travelling at the rate of three miles an hour. This is for continued operations through the day. If the horse, however, is put to his utmost capacity, such as is frequently the case with the truck horses of this city, he can carry double this load. Many apprehensions were entertained that our severe frosts and deep snows would injure and obstruct its operations. But the frosts of two winters have done no harm to the road; nor has the snow, which, winter before last, was deeper than has fallen before for several years, presented any serious obstruction. "On first passing it, while the snow was light, two pieces of plank were placed before the car, meeting in an angle at the centre, and drawn along the rails; by this means the snow was effectually removed, so as to render the travelling of the wheels as free as in summer." It is doubtless true that a Rail Road as well as a turnpike may be at times partially covered by snow, so as to require some digging. But it will not often happen, that snow will prove such an obstruction as may not be easily and speedily removed by the addition of another horse.

The success of this Rail Road is fortunate, not only because it accomplishes the object for which it was designed, but because it serves to give confidence to calculations for other and more extensive roads.

Before we proceed further in relation to Rail Roads, perhaps it will be well to say a few words by way of explanation on what is termed a horse power, and the principles on which it has been determined; with a particular view of illustrating, more clearly and satisfactorily, the advantages of a Rail Road over any other road.

The resistance to the motion of a load, arising from friction, principally at the axles, on a level Rail Road, has been found, by repeated experiments, not to exceed one pound in every 200 or 210 pounds, or about 11 pounds to a ton. That is, a weight of 11 pounds, suspended over a single pulley and attached to a load of one ton, is sufficient to overcome the friction and keep it in motion. Friction is always in proportion to the weight, whether the motion be slow or rapid, and whether the road be level or not. If the road is not level there will be an additional resistance to be overcome in ascending, proportioned to the degree of ascent.

This resistance is found to be equal to 11 pounds in an ascent of 26 feet to a mile; and greater or less just in proportion as the ascent is more or less. It follows, therefore, that to move a load up a Rail Road inclining at the rate of 26 feet in the mile, it will require a power equal to 22 pounds to the ton. That is, 11 to overcome the friction, and 11 to overcome the gravity of the load. But if the same load is moving down, the gravity will be just sufficient to overcome the friction, and the only power, necessary to be exerted by the horse, will be to regulate its motion at the most convenient pace for himself.

Upon this calculation, and supposing the load to be eight tons, including the weight of the wagon, it would require, on a perfect level, a power equal to raising 88 pounds over a single pulley to carry it forward.

On a rise of 26 feet to the mile 176 pounds.
52 " " 264 "
78 " " 352 "
80 " " 359 "

And 80 feet is found to be the greatest rise necessary to be made in any part of the Road leading from Boston to Albany. This calculation is made upon wheels and axles of such diameter as are most favorable to the easy movement of the load, and at the same time capable of firm construction;—for it is obvious, that higher or lower wheels would materially alter these results.

Tredgold, in a very nice experiment upon this subject, found, that while two pounds suspended over a single pulley would move forward a load of 220 pounds on wheels eight inches in diameter, it required nearly four pounds to carry forward the same load on wheels four inches in diameter.

The power of continued exertion by a horse of ordinary strength, on an average of the estimates of fifteen different experienced Engineers, is equal to the perpendicular lift of 122 pounds over a single pulley, or to the carrying forward on a level Rail Road 11 tons; and this is the ordinary power for continued labor the year round. The extreme power of a horse for occasional exertion, a short time, is three or four times this amount.

At the Beckwith Colliery in England, each horse in his daily labor travels 19¼ miles, exerting a power equal to carrying 17¾ tons on a level for half the distance, and for half a mile of the route equal to 28½ tons.

A horse, supposed to compare with the common truck horses in Boston, carries, on the Quincy Rail Road, four loads each day, (sometimes five,) weighing 12½ tons exclusive of the wagon. A small part of this Road ascends at the rate of 66 feet per mile. A single horse has carried 17½ tons over the Road at once.

A single horse on the Monkland Rail Road, in England, carried at once 14 loads weighing 50 tons, seven miles, in one hour and forty one minutes. The first 2 miles level, the remainder on a descent of from 5 to 45 feet in a mile.

An article in one of our late periodicals gives an account from Germany, of a new model for a Rail Way and Rail Way carriage, which, together, enable the horse to carry double the quantity usual on the English Rail Way. I have also recently seen an account of a carriage, presented to the Directors of the Baltimore and Ohio Rail Road, which is said to be so constructed as to avoid in a great measure the usual obstruction of friction, and with which a single horse, upon a level Rail Road, can carry 40 tons.

But these are theories that have not yet been fully tested in a practical way. And I wish to produce no impressions here, this evening, that are not based on the every day experience of other places; though I cannot withhold the remark, that this kind of Road and carriage are comparatively new, and that it is but reasonable to expect, when they have been subjected to a tenth part of the experience and scientific observation of other roads and carriages, that great improvements will be realized.

The result of all the experience of Rail way operations, clearly and conclusively proves, that it is as easy for a horse to move forward ten or fifteen tons on a level Rail Road, as fifteen or twenty cwt. upon the best of our common roads.

From this single fact, and no one is better established, we may form some feeble conceptions of the immense amount of time, labor and expense, that must necessarily be saved by the establishment of a Rail Way through the western part of this state to Albany.

Let us now spend a few moments in exhibiting evidence as to the probable cost of this undertaking; for this, you will readily perceive, is one of the main hinges on which this great question must turn.

The Mansfield Rail Way in England, exclusive of the land, cost about $10,800 per mile. Sunderland and Hatton $9,300. And the average cost of Rail Ways in England is thought to be at this time about $9,000 per mile for a single track.

The Quincy Road cost about $11,000 per mile. This, however, it should be remembered, was a first effort, and built under many disadvantages, some of which, doubtless, would be avoided and many savings of expense made, after more experience could be brought to the undertaking.

The state of Maryland has petitioned Congress to remit the duty on the iron necessary to the construction of their Rail Way to Ohio. It is highly probable that this will be granted, which will reduce the expense $600 per mile. The first 40 miles of this Road, is in such a state of forwardness at this time, that the Engineers are able, with a good degree of certainty, to determine the cost, which the President and Directors in their second Report to the stockholders say will not exceed $17,000 a mile, although half a mile of this distance cost more than $60,000. The computed cost of this part of the Road before it was commenced was $20,000. This is a double track.

The Legislature of New York have incorporated a company to construct a Rail Road from Ithaca, near the head of Cayuga lake, to the Susquehannah in Pennsylvania. The estimated cost, by the commissioners, for that Road is only $4,000 per mile.

The Mauch Chunk Rail Way cost but $4,700 a mile.

It is a fact, worthy of notice in this place, that the estimated cost of the Erie Canal was considerably more than its actual cost. And there is much reason for believing, that the same may be the case in this undertaking, because improvements as to the economy of carrying forward such a work may reasonably be expected, as the commissioners gain knowledge and experience in it.

From all these data, and a great deal more, which I have not now time to name, I am of opinion that from $16,000 to $17,000 per mile would be a sum fully sufficient to carry a double track from Boston to Albany. And I cannot but think, that, whenever this measure is undertaken, a preference should be given to a double track.

These conclusions are drawn from facts and experience in similar undertakings elsewhere. The Report of the Board of Directors recently made to the Legislature, present us with facts and data, more directly in point, and on which a more certain reliance may be placed. I think I hazard nothing in saying, a more important document in a pecuniary point of view, (and by no means unimportant in a political one) was never before presented to any Legislature of this Commonwealth. This Report throughout, evinces that the Board realized its importance and felt their own responsibilities. We can hardly conceive of a more intelligent, careful, and patient investigation of any subject, than has been given to this. More than 1,000 miles of survey have been made on both roads. Nothing is taken for granted. All the important conclusions, to which the Directors have come, and on which they base their recommendation of the measure, appear to be the necessary result of measuring heights and distances, and weighing facts and circumstances as they actually exist.

And so obvious are these conclusions, that I think it very difficult if not impossible for an intelligent and candid mind, after a careful examination of this Report, to avoid them. The Directors estimate the expense per mile, (including 10 per cent for incidental and unforeseen expenditures, but not including land, and estimating the cost of stone at no more than the expense of quarrying and carting,) at $16,434 for a double track on the rout to Albany; and for the Providence Road $14,980 for a double, and $7,665 for a single track.

From this Report it appears that the high lands, in the centre of the Providence route, have been so far avoided, that, when completed, the Road will present no greater degree of elevation than 30 feet to the mile.

Over the whole of this Road a single horse, working seven hours in a day, will be equal to the draft of eight tons, exclusive of the weight of the carriage. The same power of a single horse, working three hours a day, will convey a carriage with twenty five passengers nine miles an hour. This is what is accomplished every day in England on roads of the same declivities, and of a much more unfavorable construction for an easy draught.

If I understand the Report, the estimates to which I have just been alluding are made upon the principle of having the iron rails supported throughout upon granite. Whereas the English rails are only supported at their joining, and where the rail is long, at intervals between them. This presents a less firm foundation for the wheels to turn upon, and of course a greater resisting medium to the progress of the load.

The commissioners also present several calculations and estimates upon the present travel and occasion of transportation; and have come to the conclusion that the net receipts from the use of the Road, after deducting all charges for keeping it in repair, and upon a saving of half the present cost of transportation, will amount to a sum exceeding $60,000 a year. Equal to 17 per cent upon the amount which the Road is by them estimated to cost. And this calculation, you will notice, is on the presumption that the amount of transportation and travel remain the same; when, according to all former experience, we may safely conclude that the reduction of the expense of travel and transportation one half, will double the amount of both.

It is estimated that the travel on the Hudson has increased twenty fold since the introduction of steam boats and the consequent reduction of the price of travelling.

In the year 1827, 24,100 passengers were conveyed in the two lines of stages over the road between Boston and Providence. The stage fare varies on this route from $1 to $2. At the highest rate it amounts to $48,200. I have somewhere, within a few days, seen it stated that the actual receipts for the last year, by only one of the two lines of stages, was $32,000. Six per cent. on the estimated cost of this Rail Road is but $19,000.

I look upon it as a well established fact, that the amount paid by passengers on this route the last year, over and above what it would actually have cost to convey them on a Rail Road, is, at least, equal to 10 per cent on the whole cost of the single track Road.

This Report also presents us with the probable amount of goods and passengers that may be expected to pass over the Albany route. And here I have no time for particulars. I can only allude to aggregates.

The whole expense for the conveyance of goods and passengers, which may reasonably be expected to pass over a greater or less extent of this Road, cannot, at this time be less than $1,000,000 annually. The number of passengers annually passing this road is estimated at $23,000.

The amount of goods, passing between Boston, Albany, and Troy, is estimated at but little short of 30,000 tons.

I am aware that some of the most influential and intelligent men among us, consider the idea of Rail Roads having any influence upon this trade as a mere delusion.

We have so long witnessed the facility, and profited by the advantages, of sloop navigation, and we have so long believed, and had reason for believing, that nothing could ever come in competition with it, that we look upon any thing offered as a substitute, as we do upon a project of perpetual motion, as a contrivance to thwart, alter or overrule the laws of nature, and, of course, too ridiculous to justify even an examination.

The Directors have investigated it; and, in my opinion, clearly and fully demonstrated its superiority over sloop navigation. According to their Report, the cost, exclusive of tolls, after allowing fifty per cent. for unforeseen expenditures, is less than $2 per ton, while the usual freight of the Albany packets is from $2½ to $4, besides insurance. In fact, when the advantages of greater speed, greater safety, and greater certainty are considered, it is more than possible, that trade may be carried on over this Road, between Albany and Boston, even cheaper than between Albany and New York.

As an illustration of this, perhaps you will say, extravagant position, let us look at the sloop navigation of the North River, with which, to answer all the expectations of its projectors, the Rail Road must successfully compete. A sloop that carries 30 or 40 tons, costs from $2,000 to $3,000, and safety requires that it should be navigated by three men. The average time in which a trip is made to New York and back to Troy, is, at least, a week, often double that time, and sometimes, a month.

On the Rail Road, four horses and two men, with carriages that cost a quarter part as much, will go and come with the same quantity of goods in four or five days, and calculations may be made with as much certainty, as to their times of starting and arriving, as can now be made with regard to the mail. And, for four or five months in a year, all goods must go and come in this way; and would do so, even at four times the cost of sloop navigation.

Besides, the North River is frozen at that time of the year, when farmers and others can, with most convenience, attend to forwarding and marketing their produce.

This, let it be remembered, is the state of the case, when only horse power is used. Whereas steam-engines, both stationary and locomotive, are now in successful operation in England to a great extent, and are just commencing operations in our own country. These engines carry forward from 50 to 100 tons, at the rate of from three to eight miles an hour; and, undoubtedly, at a less rate of expense, than a sloop of 40 tons could be built and kept in repair. Grey, an English author on Rail Roads says, "these engines remain effective 18 years, without any material expense." Sloops not much above half that time.

The Hudson and Delaware Canal is terminated by a Rail Road from the foot of the Mosick Mountains, 16½ miles long, overcoming an elevation of 858 feet. Seven locomotive engines, of Losh and Stevenson's (English mechanics) construction, are now about commencing upon this road. They are expected to carry from seventy to eighty tons, from three and a half to four miles an hour; cost, in this country, all expense included, $1600 each. These engines, says a gentleman who was travelling in England, and who had given particular attention to this subject, with a view of communicating useful information in the United States, "are simple in their construction, neat and light, of five or six horse power, and each one generally takes a train of eight or ten loaded wagons. The conductor executes the manœuvres with such surprising facility, that one would almost imagine the beautiful machinery to be endowed with intelligence. The whole train is made to advance, recede, or turn out at pleasure; and, when arrived at its destination, the machine immediately takes a position in the rear of the line of wagons, pushes them onward to the shoots where the coal is discharged, and finally taking them in its train, returns back upon the same route.

Had an individual twenty years ago foretold the improvements now realized in the steam navigation of the Hudson, he would doubtless have been as much ridiculed as Symmes is for his theory of the world. Nor is it in the ken of any one to anticipate the improvements which may be made in this branch of science the next twenty years.

But I do not hesitate to declare it as my fixed conviction, that when a permanent Rail Road of double tracks is once established between Boston and Albany, it will at least prove a successful competitor with sloop navigation at any time of the year; and that New York will be under the necessity of running a Rail Road alongside of North River in order to secure to herself a successful competition with Boston, for the inland commerce of the largest and richest part of her own State.* Visionary! merely visionary! methinks I hear some one whispering. Well, if there is any doubt about it, give it up; for the expediency of the measure is by no means dependent upon the correctness of this position. But whatever course the summer trade of Albany may take, there can be no question as to that of the winter; and when it shall so happen that a foreign demand for flour and other bread stuffs shall raise the price of those articles on the sea board, when the North River is frozen, this trade must become extensive, of great value to Boston, and still greater to Albany.

Again, what would be the value of the road if we were involved in war? And however safe we may now feel from the ravages of this calamity, until the hearts of men are changed, we shall be in constant danger of it. The Harrisburg Convention tell us, that 280,000 barrels of flour is consumed in Massachusetts annually. The difference in the value of this quantity of flour and other bread stuffs at Albany and Boston, during the last year of the last war, would probably amount to a sum sufficient for the entire construction of this road. There is an old maxim, In time of peace prepare for war. The usual preparation for war, however, has had such a tendency to produce an appetite for it, that this has of late become a maxim of rather doubtful cast. But here is a preparation to which the man of peace, as well as the man of war, may give his cordial amen; and one too in which the expenditure of three millions would do more to preserve us from that calamity, or sustain us under it, than ten millions for a navy. Indeed, if there is any one measure doing more than all others to render us as a nation invulnerable, it is that of our internal improvements.

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*This position is taken upon the ground that little or no toll be charged upon goods passing over the whole route to or from Boston and Albany. This trade would be so valuable, as to make it very desirable that a Railway for this purpose should be as free as the waters of the Hudson. And if the tolls accruing upon goods to and from the interior to Boston and Albany, together with that from passengers, should be sufficient to meet the expenses of the road, no good reason can be given why the Boston and Albany commerce should be burdened with any toll at all.

It will not be thought out of place, I trust, if we now just take a glance at some of the local and other considerations, which have had a bearing upon the relative prosperity of the city and State of New York in comparison with that of Boston and Massachusetts. At the commencement of, and throughout the memorable contest for, our independence, Massachusetts was unquestionably the most powerful, wealthy and influential State in the Union, though her territory was but a speck in comparison with several of the other States. No State sent so many troops into the field. No one kept its troops so well supplied, and no one made greater sacrifices than Massachusetts. While at the same time she furnished more than her full proportion of moral and intellectual power; as well as persevering and enterprising spirit, both in the cabinet and the field. Nor has the lustre and intrinsic value of the best characteristics of her citizens been in any degree diminished or obscured since the Revolution. Massachusetts still continues to send forth her enterprising merchants, sailors and mechanics into every part of the civilized and uncivilized world. Many of the most prosperous and influential citizens of every seaport in the United States are the sons of Massachusetts. The same may be said of the West Indies, South America, Europe, India, and wherever else commerce can be pursued. Not an ocean, sea, bay or inlet in the commercial world, that is not whitened by Massachusetts canvass, and cheered and prospered by Massachusetts intelligence and enterprise. Not a State in the Union possesses so much shipping. Not a State in the Union, comparatively, so much capital. Not a State in the Union so much scientific, mechanical, manufacturing and commercial knowledge. And yet, after all these advantages, how poor a comparison as to the rise of real estate, increase of population and internal resources, does Massachusetts bear with the state of New York, or Boston with the city.

I know it will be said that there are natural advantages, which increase the prosperity of New York, and natural disadvantages which retard that of Massachusetts. It is true, the deep and unobstructed waters of the Hudson, running 160 miles into the heart of the State, do present natural advantages, which, when improved, are of incalculable value.

But what did these natural advantages do for New York, the first one hundred and fifty years after its settlement? And how were the natural disadvantages of Boston and Massachusetts, during that time, overcome?

New York was settled earlier than Boston, and from the first moment of her settlement, possessed of all those natural advantages which now attract so much attention through the Union and the world. The principal difference between these two States, before and since the revolution, is, that the science, influence and enterprise of the citizens of New York, have been directed to the improvement of the natural advantages, which the God of nature has bestowed upon them. While those of Massachusetts have contented themselves with looking on, admiring and doubting.

It is true, New York has an immense back country, and its prosperity has been owing to the settlement of those vast tracts of rich and fertile land in the western part of that state. But what is the settlement of these lands owing to, but the improved facilities of transporting settlers and necessaries to them on the one hand, and, on the other, their produce to a profitable market?

It is equally true, that the growth of any city, in a land of liberty, must be somewhat in proportion to the extent and richness of the country, which is to receive a supply of foreign goods from it, and in which a market is to be found for its own productions.

But it ought not to be forgotten. that Troy is as near Boston as New York, and of course the moment a mode of conveyance is opened between Troy and Boston, through which a barrel of flour can be transported, as cheap as from Troy to New York, that moment Boston and Massachusetts are competitors with New York, for the whole of that immense and fertile territory, to the shores of lake Erie; and a part of Pennsylvania, Ohio, and even Michigan, may be expected to find its best outlet for surplus produce at Boston.

Nor is this all; nearly the whole of our trade with that part of Massachusetts, beyond Connecticut river, is now as much diverted from Boston, and its communications as much cut off from the remainder of Massachusetts, as though it was not a part of it.

The trade of Vermont, once almost exclusively centering in Boston, is now, much of it, directed to Lake Champlain, and, through the Northern Canal, to Troy, Albany and New York. But this Rail Road once established, we stand on equal ground; for that part of it which takes the course of Lake Champlain, and for that part of it which finds its way to Connecticut river, there can be no competitors. And the same may be said in relation to much of the south western part of New Hampshire.

Whatever may be the advantages, which such an enterprise promises to the Commonwealth collectively, the question very naturally, and, to a certain extent, very properly, arises in the minds of its inhabitants—What effect will this measure have on their part of the state? their town—the produce of their own industry? For, after all our fancied disinterestedness, patriotism, public spirit, and other generous characteristics, of which we are so fond of talking and hearing others talk, it is as true now as when the poet wrote it, that we are all

> "Too much inclined to sigh and groan,
> "For public good and mean our own."

And, however much we may have the general good at heart, if we can discern our own interest, it will be something new, if it does not get the ascendency.

There are some portions of the state that are fearing evil, serious pecuniary evil, from this measure. There is a trembling in my own neighborhood, and probably fears prevail throughout this vicinity, lest the produce from more distant portions of the country should come in competition with ours, and cause an annual decrease in the value of the articles with which we are now supplying the daily wants of this city; and consequently, a decrease in the value of the land that produces them.

It is a curious fact, that, when it was first proposed to construct turnpikes leading from London to the adjacent and more distant country, that the inhabitants of its vicinity, feeling that an increased extent of territory would have its productions thereby brought within the reach of their own market, took the alarm, and for the same reason; and, actuated by the same selfish, groundless fears, absolutely sent more than twenty petitions into Parliament, to arrest an important improvement, from which, (as they afterwards found) they were to derive very great pecuniary benefits.

But I need not have crossed the Atlantic for a case in point. When the project of erecting the old Charlestown Bridge was first agitated, the inhabitants of Dorchester, Roxbury, Brookline—my own native town—and several others, were induced from the same consideration, to permit the same narrow, selfish fears to disturb their tranquillity; blinding and blunting their otherwise acute and penetrating minds, to the discernment of their own best interest. We blush for our fathers. Time, however, has been rolling on, until it has placed us in their shoes. Shall we give our children the same occasion to blush for us?

Let us look at this objection more closely. Let us examine items. And I confess I am loth to set about it. I have hardly patience enough to try your patience, by stopping to weigh mites, which, like the small dust of the balance, if they actually weigh any thing, are so light, that they can have, and ought to have, no sort of influence whatever upon this question.

Hay, grain, cider, apples, potatoes and other vegetables and small fruits, include, I believe, the whole catalogue of our productions. Hay is probably the article about which most fear is excited; and is one on which a very general dependence is placed by farmers, within twenty miles of this city. There can be no doubt, but that the surplus hay raised in the vicinity of the Rail Road, through its entire route, will become a marketable article,either here or at Albany, and, of course, give an increased value to all the land on which it is raised. But hay, let it be remembered, is an article of import in Boston, to a very extensive amount, and of export too. And all that comes from the country by the Rail Road must come in the same form, as that from Maine: with which alone, the western hay can come in competition. Maine could, and would, send double the quantity she now does to this market, if there was a demand for it. And never would have sent any, if this vicinity could have furnished a full supply. The imported hay now consumed in Boston, makes the price, relatively, of all that is brought to this market, and has done so for several years, and will continue to do so, until a full supply reaches the city from the interior, and no longer. Say if you please, for the sake of illustration, that Maine disposes of 4,000 tons annually in Boston. Of what consequence would it be to us, if 2,000 tons of it should in future come from Connecticut river.

Just to the extent that this article can be furnished from the interior, will it drive the article from Maine out of the market. And, until the quantity that reaches us by the Rail Road shall be equal to that, now imported, it can have scarcely no influence at all upon the price of ours; nor even then, unless Rail Road conveyance should be cheaper than sloop navigation. I am aware that I have been charged with indifference to my own and my neighbors' interest in this matter; but, no commercial fact is more certain, than, that the price of an article, which is freely imported or exported, is not to be materially varied by the amount raised at home. In the present free state of interchange and commerce between nations, you might, with as much propriety, expect to increase the depth of water at the light-house, by emptying the Nashua into Boston Bay, instead of the Merrimack, as to expect to produce any thing more than a momentary variation, in the price of an article of import and export, in any commercial city, by increasing or decreasing the quantity at market.

The same remarks apply with equal propriety to potatoes, apples, and cider. And, as to grain, if it should become cheaper, gratitude, rather than regret, should be felt by us, for there is not a town within ten miles of this city, that does not buy more than it sells.

And as to other vegetables and small fruits, I presume the veriest Quixote among us can find nothing here to fear or fight. For until it is for our interest to send half as much of these articles *at a time*, as a horse can draw over the worst road among us, we certainly need entertain no fears of seeing a car loaded with ten or fifteen tons of green peas, cabbages, cucumbers, &c. coming down the Rail Road upon us.

On this part of our business, which is the only part by which any farmer in this vicinity ever yet grew rich, it appears to me impossible that the Rail Road should ever have an unfavorable influence. But on the contrary, the increased prosperity and population of Boston, that may be reasonably anticipated from this measure, will produce an increased demand for these articles; and, of course, increase the value of a monopoly, that must, I think, always remain exclusively our own; and in my opinion, produce to us an increased benefit, ten fold greater than all the disadvantages that can possibly be realized from it.

As to the relative advantages which the various portions of this Commonwealth are to derive from this enterprise, there is unquestionably a very great difference. I confess I am unable to see how the counties of Essex, Plymouth and Barnstable are to be directly benefited by it. But suppose we are not all benefited; are we never to lend a helping hand to any great and good enterprise, until it is demonstrated to us, that a full proportion of *all* its benefits will come into our own garners and storehouses?

I envy no man that disposition which will not allow him to take a single step, or make a single sacrifice until he can clearly see that his own interest, or comfort, or gratification, is to be thereby increased. Nevertheless 'tis true, too true, that the miserable effects of this disposition are more or less felt, throughout every portion of our prosperous Republic, undoubtedly constituting one of the greatest stumbling blocks in the way of improvements of every description, whether large or small, national or local.

But I would not be understood as expressing a doubt of its being beneficial in some degree, either directly or indirectly, to the inhabitants of every town in the Commonwealth. Of this I think there is sufficient evidence, if fairly estimated, to enlist the energies and efforts of all for its accomplishment. If I had time, I might easily go into detail, and demonstrate more fully and clearly this position, by a reference to facts and circumstances;—but I can now only say, should this measure be undertaken, and be as successful as the Erie Canal, or as the Rail Roads of Great Britain, (and I see no reason why it may not be,) its income would meet the expenses of the Commonwealth and forever relieve the towns from the burden of a State tax. And as the population, resources and wants of the interior increase, this income must increase, and place at the disposal of the State resources for new enterprises of a similar character, for the benefit of those parts of the State, which have least interest in this.

But whatever diversity of sentiment there may be in relation to other parts of the Commonwealth, it appears to me, there can be but one sentiment, as to the influence it will have on the pecuniary prosperity of this city. To include my belief on this point in one word, and I have now time for no more, the increased value of property, in Boston only, will be much more than sufficient to defray the whole expense of this road. I am not without my fears that you may think this an extravagant prediction; but look a moment. The present valuation of property, according to your Assessors' books, amounts to nearly seventy millions of dollars, and if it had all been found, I have no doubt but that it would amount to more than one hundred millions. About half of this is real estate; of course a rise of 6 or 8 per cent. on the real estate only, of this city, would amount to a sum nearly sufficient to construct a Rail Road, with a double track to Albany.

But this calculation is made on the presumption that the value of property will remain the same as it now is, if no improvement of this kind should be carried into effect, when, as certain as cause and effect are connected, and as the one follows the other, there must be a diminution in your population, and, of course, in the value of your property. In truth you are realizing this diminution at this moment, and from this very source. No axiom is more certain, and no one ought to be better understood by the rulers of a country, than that capital will go where it can find the most profitable employment, and it is equally certain to a great extent, that it will carry its owners with it; at least a part will go, and that part will be those who are the most enterprising, who are now contributing most to the prosperity of your city. So confident am I in the correctness of these positions, that I will venture one more (perhaps you will say still more extravagant) prediction, and that is, if no measure of this kind is adopted, in ten years from this time, there will be a diminution in the value of property in this city to an amount more, much more, than sufficient to construct this road.

Perhaps, however, some of us from the country, when at our own firesides, and thinking of no one's fireside but our own, may shrug up our shoulders, and ask, Of what consequence is it to us, whether the property of Boston increases or decreases? But it would be well for us to inquire how it happens, that, when our Legislature adopt the old maxim,—which, I cannot but think, is still a good one,—That it is better to pay for what we need, than to run in debt for it, that Boston, a little spot, that I can cover on the map with my thumb, is called upon to pay a third of it. Would country influence at this moment have been enabled to throw seven-eighths of the whole expense of the Commonwealth upon this city, and raise, in the shape of bank taxes, auction taxes, &c. two or three hundred thousand dollars annually, from the sources and fruits of its prosperity, if Portsmouth, or Providence, or New York, had been the commercial capital of New England? What has raised up a city in Lowell, and brought a market and all the advantages of commercial enterprise and prosperity into the vicinity, of one hundred square miles, increasing the value of the whole, and of some of it more than forty-fold? What has done the same thing in Waltham, Ware, Springfield, and, to a greater or less degree, in a hundred other places in the Commonwealth? I answer, Boston capital, Boston prosperity. As well might the foot say to the head, I have no need of thee; or the head to the foot, I have no need of thee; as the country to say to the city, I have no need of thee. Our dependence upon each other is mutual; we must rise or fall, live or languish, sink or swim, together; and God forbid that we should ever become so unmindful of what we owe to each other, or so regardless of our mutual and best interests, as to refuse to pull together. But it may be said, perhaps, that surplus capital would come from other States to improve the natural advantages and facilities of our own. So it would, after there was no further opportunity for it at home, and not till then. Nor then, unless the preponderance in favor of removal is quite manifest; for there is something in the bosoms of most men that prepossesses them in favor of home; and there are few, very few, who do not prefer devoting their influence and property to the promotion of the prosperity of their own State, their own town, or neighborhood, to that of another. And when I consider the high moral and religious character which has been sustained by the inhabitants of Massachusetts from its first settlement; when I consider the weight of influence which she has uniformly given to the promotion of the independence and prosperity of our common country; when I consider her whole moral and political career, from first to last; I do not wonder that this feeling predominates in the hearts of all. I rejoice in the fact of its existence, and look to it as that bond of union, which is to carry the whole State forward together in the accomplishment of this, and many other similar enterprises.

One more point is all that I can now venture even to glance at; for I fear I have already exhausted your patience. Of this, perhaps, it would be more becoming in me to be silent, and wait patiently for the wiser decision of the intelligent and respectable body that has just now convened to act upon it. But Yankees are born to the privilege of thinking for themselves; and even mechanics here may weigh every public measure, in their own scales, form their own opinions, and express them too with impunity, and even propriety, provided it be done with becoming respect for the powers that be. The point to which I allude, is the question, Shall the State undertake this project? or shall its accomplishment be left to private individuals? Much has already been written and said, and will doubtless continue to be written and said, on this point. Among other arguments against the State, as such, having any thing to do with it, I have only time barely to name the following.

1. It is said, that, in the nature of things, individuals look sharper after their own interest than that of the public, and, consequently, wherever public work is going on, it is uniformly at greater expense, than when the employed are at work for themselves, and expending their own funds.

To me this mode of reasoning appears fallacious. Those who are the immediate agents for carrying on this enterprise, will be the employed, alike, whether it be done by a corporation or the State, and under precisely the same temptation to unfaithfulness, both in kind and degree, in the one case as in the other.

2. It is said, there is a vast amount of capital in the hands of rich men, who are shrewd and intelligent, fully competent to judge of its probable success, and of course, if there is a reasonable prospect of profit, they will be ready enough to embark in it. If they can see no sufficient inducement, it is a reason why the State should be cautious.

To this it is replied, that the State can raise the necessary funds at a better rate of interest by at least one per cent. per annum than a corporation could do. And when done, the property would be more valuable, and I think the stockholders in the old Charlestown Bridge Corporation would say, safer, than in the hands of a corporation. The State, as such, would reap all, or nearly all, the advantages that might be realized from it; a corporation not a fourth part of them. One of the grand objects of this enterprise is successful competition with New York for the trade of the western country; and to secure this object, it should be in the power of the State, at all times, to make such alterations in regulations, tolls, &c. as changing circumstances of the future may render necessary. If profitable in the hands of the State, this surplus income may, from time to time, and very naturally would, be devoted to internal improvements elsewhere. But three or four millions of this capital, in the hands of a corporation, would array a powerful opposition to every description of internal improvement that might, in any way, infringe upon, or lessen the profit of theirs. How, think you, would the inhabitants of New

York receive a proposition for passing the Erie Canal into the hands of a private corporation?

3. Another reason, and probably the most prevailing one, in the minds of many, why the State should not undertake it, is, a conviction that the road will not nett the interest of its cost. I think there is sufficient reason for believing it will; at least as much as the Commonwealth will have to pay. But what if it should not? If, at this moment, the Erie Canal tolls paid but 2 per cent., instead of 6 or 8, upon its cost, is there an individual who now hears me, who would not say, that the act which sanctioned its construction was one of the wisest, and most profitable, too, that was ever passed by any Legislature of New York?

Again, it is said, If done by the state, the expense would fall equally on all parts; while the advantages would be very unequally divided.

In the first place, I do not believe that the expense will fall equally on all parts of the state. If the state should hire the money necessary for the accomplishment of this object, its income, of course, would be pledged for the redemption of the debt, and, so far as it goes, this will be paid by those, and only those who have the benefit.

And, I ask, why may not Massachusetts pledge her tax on banks, auction sales, &c. &c. for the redemption of this debt, with as much propriety as did New York her salt duty, her auction duty, &c. for the redemption of the debt incurred for the construction of the Erie canal.

Again, I ask, have not the capitalists of this city a sufficiently deep interest in this measure, to induce them to take up this stock on better terms than they would do that of the U. S.? Would it not be reasonable to expect them to be as ready to take Massachusetts 4 per cents. at par, for the construction of a Rail Road, which was to pour its treasures with usury back again into their own pockets, as to take the U. S. 5 per cents. on the same terms, to build forts on the Arkansas, Missouri and Oregon; projects which can pour treasure into no one's pocket? Would not the owners of real estate feel their own interest to be promoted, by taking portions of this stock at a higher rate than it was actually worth? Could they promote their own prosperity, with more certainty, by a sacrifice of equal amount in any other way? No, there is not an owner of real estate—not a ship owner or merchant—not a master mechanic or manufacturer—not an individual, who is in future to depend upon the prosperity of this city for his own, who needs any other motive, than enlightened selfishness to prompt him to such a momentary sacrifice. The directors tell you they have already claimed of us, our surplus land over which the road is to pass—our surplus labor to fence it—and our surplus stones with which it is to be constructed. These sacrifices from us, are claimed on the ground that what we have left after the Road is done, will be worth more than the whole is now. And is it really and in truth a greater sacrifice for you to contribute of your surplus wealth with precisely the same motive, and for the same end? Your vaults of surplus dust, I know, shine, and glitter, and fascinate more than our quarries of granite, but their real value to their possessors is just about the same. In a word, let all those whose interests are to be promoted by this measure, put a shoulder to the wheel—let them cheerfully unite in (what was once very well understood in this city,) a "long pull, strong pull, and pull altogether," and the thing is done.

Should this course be adopted, these funds would be raised, principally, if not entirely, where the greatest benefit would be realized from the Road.

But even if it were otherwise in these respects, would its unequal bearings and benefits be a sufficient objection to the undertaking? What country—what state—what town or neighborhood ever adopted any measure that involved expense, which was not liable to the same objection? In fact, if such an objection is to be considered a sound and sufficient one, a stop will be put to every description of improvement, whether on a large or small scale, and our excellent and invaluable political institutions, would do as little towards developing our resources, and accomplishing the all-important purposes for which they were given us, as a code of laws from Japan.

And where, let me ask, is there a state in the Union that can adopt such a measure, and bring its benefits so near to the door of every individual as Massachusetts? The New York, Pennsylvania, and Ohio Canals, and every other measure for internal improvement, have been liable to the same objection, and to a much greater degree than this. The Rideau Canal, in Canada, is a much more expensive undertaking than this Rail Road—and at least three fourths of Canada will realize less benefit from it, than a very considerable part of New York, Pennsylvania, Ohio, and Michigan.

If the State undertakes this project, may she not expect aid from the general government? If her Governor had been permitted to strip off his coat, grasp the spade, and upturn the first sod on the fourth of last July, (which I know he would have done most willingly,) while another of her distinguished sons was in the performance and enjoyment of a similar and most rational kind of celebration, among the more enterprising, and less fastidious citizens of Maryland—and if, like that State, Massachusetts had at this moment a petition in the hands of the same committee, who have just now reported a grant of a million, to the Baltimore and Ohio Rail Road, could they have avoided a proportionable grant here? If this State now begins, may we not reasonably calculate upon this kind of aid? Nay, more, after what has been done, and is now doing, in other states, have we not a right to demand it? I presume I need not say a private corporation can expect no such aid?

And lastly, it is said, there is no money in the treasury. And what if there is none? The fact of a full or empty treasury ought, in my humble opinion, to have no weight at all upon this question.

No one but a spendthrift ever seriously thought of offering the fact, that he had money in his pocket, as a sufficient reason for an imprudent expenditure. And however paradoxical it may appear, I know of no way so likely to fill empty pockets, as the judicious and liberal expenditure of money for valuable purposes.

Our fathers did not reason thus 50 years ago, when they, with an empty treasury, came to the resolution of hazarding the expenditure of hundreds of millions, to secure an honorable independence for themselves and us. The only question with them was, "Is the object worth the sacrifice?" That question settled, they trusted Providence for the ways and means, and were not disappointed.

Massachusetts too poor to construct 200 miles of Rail Road! while New York, with an empty treasury, constructs 500 miles of canal, Pennsylvania as many more, and Ohio, with an empty treasury, can undertake the construction of two canals running the whole length of that state, and amounting to nearly 600 miles, incurring an expense of 12 or 15 millions of dollars, and Massachusetts too poor to hazard the expense of three millions!!

Nine hundred miles of Canal now finished in the United States, and 1,300 in progress. The whole expense for internal improvements in the Union, including all that is finished and in progress, cannot be much less than 50 millions of dollars. And Massachusetts, with a motive stronger than any other state, except New York, too poor to expend three millions!!!

These were my opinions before seeing the recent report; and this has entirely confirmed me in them. The report estimates the aggregate number of passengers between Boston and Albany at 23,000. That the expense of transporting a passenger, after adding 50 per cent. for incidental and unforeseen expenses, will, at the extent, not exceed $1,05. The present stage fare is $8;—making a difference on passengers only to an amount exceeding 6 per cent. on the cost of a double track Rail Road. In this report the directors recommend a toll of $2 upon each passenger, raising the fare to $3,05. In the hands of a private corporation what is there to prevent the fare from being kept at $8? The passage would be made in 22 hours—it now requires two days, with about 36 hours travelling. It is perfectly obvious, that the greater ease, greater speed, and greater certainty of this mode of conveyance, would secure an almost entire monopoly of this business, and greatly increase it too, without any reduction in stage fare whatever.

When the legislature of New York gave the Fulton company, the exclusive steam navigation of its waters, they knew not what they did. The inhabitants of that State looked upon the project of carrying hundreds of passengers at once up the North River, seven or eight miles an hour, with nearly the same feeling, that those of Massachusetts have been viewing the proposed accomplishment of a similar achievement, over the mountains of the west; a mere project of a hair-brained, philosophical genius, that would soon evaporate in smoke or steam; and "like the baseless fabric of a vision, leave not a wreck behind." When this company commenced operations their fare was the same as the stage; and the stages were run down as completely, and with as much ease, as though the fare had been put at half price. And had not their charter been taken from them, they would have continued to this day, wresting from the people hundreds of thousands of dollars annually, more than a fair profit upon their capital; while, at the same time, they would have been retarding the progress of the State in its internal improvements, and causing injury, in a pecuniary point of view, to the whole State, to an annual amount of millions.

The truth is, science is now offering Massachusetts a "North River," or rather a substitute as good as the thing itself. True, a price is asked—but it is less, incomparably less, than its value.

The question I have been at work upon the last ten minutes is, will the legislature of this state accept and make the most of this offered boon? or, will they give it away? The decision of this question I most cheerfully leave where it belongs.